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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)
Rulemaking to Amend Parts 1, 2, 21,)
and 25 of the Commission's Rules to)
Redesignate the 27.5-29.5 GHz)
Frequency Band, to Reallocate the)
29.5-30.0 GHz Frequency Band, to)
Establish Rules and Policies for Local)
Multipoint Distribution Service and for)
Fixed Satellite Services)

CC Docket No. 92-297

OPPOSITION OF SKYBRIDGE II L.L.C.

SkyBridge II L.L.C. ("SkyBridge II") hereby submits its opposition to the petition for clarification and/or reconsideration filed by Teledesic Corporation ("Teledesic") in the above-captioned proceeding on December 18, 1997. SkyBridge II is a U.S. company that, on December 22, 1997, filed an application with the Commission for authority to launch and operate the "SkyBridge II System," a global, low Earth orbit ("LEO") satellite system, which will provide a wide range of data, voice, and video broadband services in the Commission's Fixed-Satellite Service ("FSS") in the Ka-band.^{1/} SkyBridge II is thus vitally interested in the instant proceeding.

In its petition, Teledesic requests that the Commission "reiterate that it did not endorse any specific co-frequency sharing scenario" for facilitating entry of

^{1/} Application of SkyBridge II for Authority to Launch and Operate the SkyBridge II System (filed December 22, 1997) ("SkyBridge II Application").

multiple non-geostationary orbit ("NGSO") FSS systems.^{2/} Thereafter, Teledesic states that "all indications lead to the conclusion that [sharing using non-coordinated orbits] should not be adopted for the NGSO FSS Priority Bands."^{3/}

While SkyBridge II agrees with Teledesic that the Commission has not endorsed or rejected any specific sharing technique, SkyBridge II strongly disagrees with Teledesic's conclusion that non-coordinated orbits should not be used in the NGSO FSS priority bands. As the basis for this conclusion, Teledesic asserts, without providing any evidentiary or technical support, that "it is doubtful whether more than two systems can operate co-frequency using non-coordinated orbits."^{4/} As SkyBridge II, and its sister company, SkyBridge L.L.C. ("SkyBridge I"), have explained in previous filings with the Commission,^{5/} whether two systems can operate co-frequency using non-coordinated orbits depends upon a number of factors, including the number of satellites, the orbits, the spot-beam characteristics, the

^{2/} Teledesic Petition at 4.

^{3/} Id. at 9. Teledesic refers to homogeneous systems that share by interleaving their orbital planes or satellites as having "coordinated orbits." Id. at 3, n.3. This term may be somewhat misleading, as "coordination" is also used to define the process undertaken by two parties to reach agreement on how their two systems can coexist, in the event that analysis shows that the new system will exceed an interference threshold with respect to the existing system. Such coordination thresholds are defined between GSO systems, but are still under study by the NGSO systems.

^{4/} Id.

^{5/} See Application of SkyBridge I for Authority to Launch and Operate the SkyBridge System, File No. 48-SAT-P/LA-97 (filed February 28, 1997), as amended, File No. 89-SAT-AMEND-97 (filed July 3, 1997); SkyBridge II Application.

elevation angles, the radio parameters and power levels of each system. Because the ability of any system to operate in conjunction with another will depend upon the specific characteristics of each of the systems, SkyBridge II supports the Commission's decision to "evaluate all applications for NGSO FSS systems on a case-by-case basis."^{6/}

Moreover, SkyBridge II believes that a properly designed system can operate effectively co-frequency with another system having non-coordinated orbits. Sharing between NGSO systems is not so much a matter of frequency sharing, but rather of space sharing. Non-homogeneous NGSO systems can share space simply by implementing hand-overs when satellites of two constellations may interfere with one another. Non-homogeneous systems designed with sufficient satellite diversity capabilities will be able to share just as homogeneous systems can. The Commission has been provided with detailed information regarding several proposed systems^{7/} that

^{6/} Third Report and Order, In the Matter of Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, FCC 97-378, at ¶ 38 (Oct. 15, 1997) ("Third Report and Order").

^{7/} See SkyBridge II Application; Application of Motorola for Authority to Construct, Launch and Operate the Celestri Multimedia LEO System ("Celestri LEO System"), filed June 12, 1997 ("Motorola Application"); Amendment by TRW Inc. ("TRW") filed December 19, 1997 ("TRW Amendment") to Application of TRW for Authority to Launch and Operate the TRW Global EHF Satellite Network, filed September 4, 1997; Application of Lockheed Martin Corporation ("Lockheed Martin") for Authority to Launch and Operate the LM-MEO Satellite Communications System, filed December 19, 1997 ("Lockheed Martin Application"); Application of Hughes Communications, Inc. ("Hughes") for Authority to Launch and Operate Spaceway NGSO, filed (continued...)

have been designed specifically to operate co-frequency using non-coordinated orbits with respect to Teledesic and other NGSO systems.

One system, the SkyBridge II System, proposes to operate in the bands proposed to be utilized by Teledesic for its service links. Assuming arguendo that SkyBridge II is required to protect Teledesic from harmful interference,^{8/} a variety of techniques are available to ensure compatible operation by the two systems, including, inter alia, the use of satellite diversity (e.g., SkyBridge II could establish an appropriately defined non-operating zone around each Teledesic satellite).^{9/}

^{7/} (...continued)
December 22, 1997 ("Hughes Application"); Application of @CONTACT, LLC ("@CONTACT") for Authority to Construct, Launch and Operate a Nongeostationary Orbital Fixed Communications Satellite System, filed December 22, 1997 ("@CONTACT Application").

^{8/} On September 26, 1997, Teledesic filed a request to modify its system, which request is currently pending. See Public Notice, Report No. SPB-017, October 17, 1997. A petition to deny Teledesic's request has been filed, arguing that Teledesic's request constitutes a major modification to its application, and therefore that Teledesic should lose its status as a first round applicant for use of the subject bands. See Motorola Petition to Deny, filed November 5, 1997. Motorola's petition demonstrates that the proposed modifications constitute a major amendment because (1) the modifications make "non-homogeneous" sharing more difficult and "homogeneous" sharing impossible, and (2) the increases in uplink EIRP levels create serious co-frequency and out-of-band interference issues, and therefore the modifications proposed by Teledesic can only be considered in the second Ka-band processing round. See id. at i-ii.

^{9/} In addition to the SkyBridge II System, Motorola has indicated that its Celestri LEO System has been designed to operate co-frequency with Teledesic. See Motorola Application. Although the Celestri orbits are not coordinated with Teledesic's, Motorola assured the Commission -- prior to Teledesic's filing of its modification request, see note 9 supra -- "that the Celestri LEO System will not cause harmful interference to the Teledesic system, that the Celestri LEO System will not require Teledesic to modify its system, and that the Celestri
(continued...)

In view of the detailed information regarding proposed non-coordinated orbit systems that would operate co-frequency with other NGSO systems (including Teledesic's) that has been provided to the Commission by SkyBridge II and others, and because the Commission has no other evidence upon which to reject non-homogeneous sharing for the NGSO FSS priority band, there is no basis upon which the Commission could reject non-homogeneous sharing.

Teledesic's assertions to the contrary represent no more than its desire to retain exclusive use of this band. Allowing Teledesic to maintain exclusivity would directly conflict with the Commission's expressed intention to foster competition by allowing use of the subject band by other NGSO systems. In the order granting Teledesic its license to operate in the subject bands, the Commission announced that it intended to "foster a climate that maximizes competition and promotes multiple entry of NGSO FSS satellite providers to the benefit of U.S. consumers."^{10/} Specifically,

^{9/} (...continued)

LEO System will not need to claim interference protection from the Teledesic system." See Letter to William F. Caton from James M. Talens, dated July 29, 1997. The TRW Amendment, the Lockheed Martin Application, the Hughes Application, and the @CONTACT Application also propose non-coordinated medium Earth orbit ("MEO") systems which will operate co-frequency with Teledesic and share with other NGSO systems using a variety of techniques, including satellite diversity.

^{10/} In the Matter of Teledesic Corporation, Order and Authorization, File Nos. 22-DSS-P/LA-94, 43-SAT-AMEND-95, 127 SAT-AMEND-95, at ¶ 28, (rel. March 14, 1997). In order to foster competition, SkyBridge II agrees with Teledesic that the paired 500 MHz allocated for use by NGSO FSS systems on a priority basis should not be subdivided among systems. See Teledesic Petition at 11. Broadband systems need a large amount of spectrum, and it would be wasteful to allocate to only one system the necessary amount on an exclusive basis when sharing is possible.

the Commission stated that, "[i]n authorizing Teledesic at this time, we do not wish to preclude use of this band by other NGSO FSS systems licensed to provide service either in the U.S. or in other parts of the world."^{11/} Moreover, precluding use of this band by other NGSO systems would run counter to the Commission's longstanding policies of fostering expansion of domestic^{12/} and international satellite-based communications,^{13/} efficient spectrum utilization, and competition.^{14/}

CONCLUSION

For the foregoing reasons, SkyBridge II urges the Commission to reject Teledesic's conclusion regarding co-frequency operation of two systems using non-

^{11/} Id.

^{12/} See, e.g., Establishment of Domestic Communications-Satellite Facilities by Non-Governmental Entities, 38 F.C.C.2d 665 (1972).

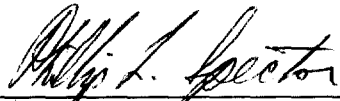
^{13/} See, e.g., The Communications Satellite Act of 1962, Pub. L. No. 87-624, 76 Stat. 419 (1962), codified at U.S.C. §§ 701-757 (1990); Agreement on the International Telecommunications Satellite Organization (INTELSAT), (Aug. 20, 1971, entered into force Feb. 12, 1973), T.I.A.S. No. 7532, 23 U.S.T. 3813; Communications Satellite Corp., 56 F.C.C.2d 1101 (1975).

^{14/} See, e.g., Satellite Business Systems, 62 F.C.C.2d 997 (1977), recon. denied, 64 F.C.C.2d 872 (1977), aff'd sub nom. United States v. FCC, 652 F.2d 72 (D.C.Cir. 1980) (en banc); Establishment of Satellite Systems Providing International Communications (Separate Systems), 101 F.C.C.2d 1046 (1985), recon., 61 R.R. 2d 649 (1986), further recon., 1 F.C.C.Rcd. 439 (1986).

coordinated orbits and to continue to evaluate all applications on a case-by-case basis,
allowing for sharing when feasible.

Respectfully submitted,

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Dated: February 5, 1998

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Opposition by SkyBridge II L.L.C. was sent this 5th day of February, 1998, via first-class mail, postage prepaid, to the following:

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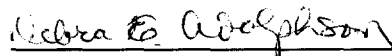
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